



US Army Corps  
of Engineers  
North Central Division

# GREAT LAKES LEVELS

## UPDATE No. 59

### JUNE 1, 1990

Precipitation in the Great Lakes basin was well above average in May. The Lake Superior basin had well below average rainfall at 80% of average. The Lakes Michigan-Huron, Erie and Ontario basins were much wetter than average at 127%, 141% and 153%, respectively. The following tables show estimated precipitation for May and for the year to date.

#### Provisional Great Lakes Precipitation (inches)

##### I. May

Basin	1990*	1900-89 Average	Diff.	% of Ave.
Superior	2.1	2.7	-0.6	80%
Mich-Huron	3.8	3.0	+0.8	127%
Erie	4.5	3.2	+1.3	141%
Ontario	4.6	3.0	+1.6	153%
Great Lakes	3.5	2.9	+0.6	121%

##### II. Year to Date

Basin	1990*	1900-89 Average	Diff.	% of Ave.
Superior	9.4	9.7	-0.3	97%
Mich-Huron	12.0	11.4	+0.6	105%
Erie	17.4	13.5	+3.9	129%
Ontario	17.0	13.5	+3.5	126%
Great Lakes	12.6	11.5	+1.1	110%

\* Estimated

During the past 12 months, total precipitation on the Great Lakes basin has been near average. Lake Superior has accumulated about 3.0 inches (10%) below average precip; Lakes Michigan-Huron have also had total precip about 2.0 inches (6%) below average. The lower Great Lakes, Erie and Ontario, have both accumulated above average precipitation --- about 4.1 inches (12%) and 5.3 inches (15%), respectively.

The National Weather Service is forecasting above-average precipitation during June for the Lakes Superior and Michigan basins, and near-average elsewhere. June's temperature forecast is for below-average for the Lake Superior basin and near-average elsewhere.

The water levels of Lakes Superior and Michigan-Huron continue to be well below average for this time of year. Lakes St. Clair, Erie and Ontario continue above average. The Great Lakes are in their seasonal rise towards their summer highs.

The International Joint Commission (IJC) has approved, on a test basis, minor modifications to the current regulation plan for Lake Superior outflows. The modifications, termed Plan 1977A, take advantage of the following: the outflow capacity increase resulting from the 1983 Great Lakes Power Limited, hydropower redevelopment; ten years of data and experience gained since the current regulation plan, Plan 1977, was implemented; and, updated forecasting techniques. Testing of Plan 1977A will continue during the IJC's Phase II fluctuating levels study which is to be completed in 1991. Plan 1977A provides for smoother transitions of flows in the St. Marys River with fewer gate changes in the Compensating Works as compared to Plan 1977.

Two documents are available from the IJC which discuss the design and testing of Plan 1977A, and provide an analysis of its impacts. Please contact the IJC by writing to: International Joint Commission, 2001 S Street, NW, Washington, DC 20440. If you prefer to call, contact Mr. Frank Bevacqua at (202) 673-6222.

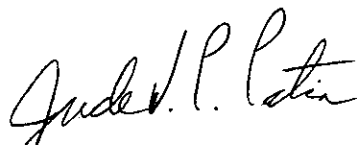
Regarding the IJC's Reference Study on Great Lakes Water Levels, the Study Board completed a number of actions. A draft Plan of Study (POS) was submitted to the IJC in May. Last month's Update Letter listed the Study Board's five basic objectives for the Phase II Study. The Study Board last month appointed an 18-member Citizens Advisory Committee which will have an organizational meeting this month.

Finally, I would like to correct an editorial mistake in the middle of the right-hand column, first page, of the March 2, 1990 Update Letter. "Waves and storm surges.." should have read "Waves." Storm surges do not cause erosion.

If erosion is primarily determined by the deepwater wave energy and the physical durability of the lakebed materials, as some are beginning to believe, then what would be the best way to deal with it? Seawalls, revetments, groins, and similar structures which provide protection at

high water levels can be undermined and destroyed during low water levels through lakebed down-cutting. This down-cutting can be prevented, or at least retarded, by stone cover, such as seen on much of the Michigan shore of Lake Huron or certain parts of the Illinois shoreline.

Effective ways to maintain or establish such a cover is by beach conservation, i.e., no permanent removal of sand, gravel or stones from the lake, or by beach nourishment (placement of sand, gravel and stones from inland onto the beach). This technique has been effective in reducing erosion damages.



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